October 20, 2004

VIA ELECTRONIC FILING

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW, Room TW-A325
Washington DC, 20554

Re: ***Ex Parte Submission***
2002 Biennial Review Proceeding -- WT Docket No. 03-264

Dear Ms. Dortch:

CTIA—The Wireless Association™ ("CTIA") submits the following technology neutral proposal to modify base station Equivalent Isotropically Radiated Power ("EIRP") limits for PCS licensees contained in section 24.232 of the Commission's rules, 47 C.F.R. § 24.232. CTIA proposes to supplement the current EIRP limits for PCS licensees with ones restated as power spectral density limits. The proposal outlined below represents a compromise of proposals submitted previously in this proceeding by various CTIA member companies.[1]

CTIA believes that the current EIRP limits for PCS licensees are too restrictive and are no longer necessary to prevent PCS operators from transmitting signals beyond the mobile unit's capability to respond.[2] The current limits, which were based on narrowband radio technologies, artificially constrain more modern technologies. In particular, current limits prevent wireless carriers from taking advantage of technologies that will increase network efficiency and significantly decrease the cost of deploying services to the benefit of consumers. Such technologies could, for example, enable coverage over larger geographic areas in

[1] *See, e.g.*, Comments of Motorola, Inc., *In the Matter of Biennial Regulatory Review – Amendment of Part 1, 22, 34, 27, and 90 to Streamline and Harmonizing Various Rules Affecting Wireless Radio Service*, WT Docket No. 03-264 (filed Apr. 23, 2004) ("Motorola Comments"); Comments of Qualcomm Incorporated, *In the Matter of Biennial Regulatory Review – Amendment of Part 1, 22, 34, 27, and 90 to Streamline and Harmonizing Various Rules Affecting Wireless Radio Service*, WT Docket No. 03-264 (filed Apr. 23, 2004) ("Qualcomm Comments"); Comments of Ericsson Inc., *In the Matter of Biennial Regulatory Review – Amendment of Part 1, 22, 34, 27, and 90 to Streamline and Harmonizing Various Rules Affecting Wireless Radio Service*, WT Docket No. 03-264 (filed Apr. 23, 2004) ("Ericsson Comments"); Comments of Cingular Wireless LLC, *In the Matter of Biennial Regulatory Review – Amendment of Part 1, 22, 34, 27, and 90 to Streamline and Harmonizing Various Rules Affecting Wireless Radio Service*, WT Docket No. 03-264 (filed Apr. 23, 2004) ("Cingular Comments"); Letter from Ray Strassburger, Nortel Networks, to Marlene H. Dortch, FCC, filed March 5, 2004.

[2] *See Amendment of the Commission's Rules to Establish New Personal Communications Services*, GEN Docket No. 90-314, Memorandum Opinion and Order, 9 FCC Rcd 4957, 5025 para. 173 (1994).

rural areas and improve coverage outdoors, indoors, and in vehicles in urban areas. CTIA believes that increasing EIRP limits under certain conditions will provide mobile wireless providers with sufficient flexibility in the foreseeable future to deploy new and innovative technologies without creating harmful interference to neighboring systems.

CTIA therefore recommends that Commission supplement the current EIRP limits for PCS licensees with technology neutral limits based on power spectral density, a concept noticed in the *2002 Biennial Review NPRM*.[3] CTIA's proposal addresses concerns raised in the *2002 Biennial Review Staff Report* that the current power limits hinder the development of new and innovative technologies that do not increase the potential for harmful interference to neighboring systems.[4]

CTIA recommends that EIRP for PCS licensees be limited to the larger of either: (1) the current rules; or (2) a power spectral density constraint that facilitates deployment of new technologies. Specifically, CTIA recommends that base stations be limited to the greater of 1640 watts average EIRP per carrier or 3280 watts/MHz average EIRP for antenna heights of up to 300 meters HAAT. For rural areas, the EIRP limits would be increased to 3280 and 6560 watts average EIRP, respectively. CTIA is not requesting that the per-MHz constraints for antennas above 300 meters exceed the current constraints. CTIA also requests that the Commission eliminate the 100 and 200 watt base station transmitter output power limits in section 24.232(a) and (b) of the Commission's rules. Given the proposed limits on EIRP, this absolute power limit adds no real interference protection and may restrict the efficient use of state-of-the-art technologies. Please find attached to this letter a revised version of section 24.232 of the Commission rules reflecting CTIA's proposal.[5] To ensure regulatory parity for technically like services, CTIA proposes that the Commission mirror these rule changes in section 27.50(d)(1) of its Advanced Wireless Service rules.[6]

The power spectral density levels proposed by CTIA are consistent with, although slightly below, the power spectral densities permitted under the current rules. The current rules permit operation of individual carriers at 1640 watts EIRP. A GSM system with two carriers in 1 MHz, a not unusual configuration, can today generate a signal with 3280 watts EIRP/MHz and a system with three carriers in 1 MHz, a possible configuration, can generate 4920 watts EIRP/MHz.

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[3] *See Biennial Regulatory Review – Amendment of Parts 1, 22, 24, and 90 to Streamline and Harmonize Various Rules Affecting Wireless Radio Services*, WT Docket No. 03-264, 19 FCC Rcd 708, para. 18 (2003).

[4] *See The 2002 Biennial Regulatory Review*, CC Docket No. 02-390, Report, FCC 02-342, Appendix at 67 (rel. Mar. 14, 2003).

[5] This revises the draft rules in the Commission's recent rural wireless order. *See In the Matter of Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services*, WT Docket No. 02-381, Report and Order and Further Notice of Proposed Rulemaking, FCC 04-166 (rel. Sep. 27, 2004).

[6] *See* 47 C.F.R. 27.50(d)(1).

CTIA also requests that the Commission clarify that the per-carrier limit applies to frequency-hopping systems and that OFDM systems must meet the appropriate watts/MHz limit. For systems that use discontinuous transmission, CTIA proposes that the watts/MHz limit apply during the time when transmitting (the time averaging of power cannot include transmitter off time).

Pursuant to Section 1.1206(b) of the Commission's rules, an electronic copy of this letter is being filed. Should you have any questions about this proposal, please do not hesitate to contact the undersigned.

Sincerely,

/s/ *Paul Garnett*

Paul Garnett
Director, Regulatory Policy

Enclosure

cc: Roger Noel
Lloyd Coward

PROPOSED RULE CHANGES

Below is the text of the current version of section 24.232 of the Commission's rules as published in FCC 04-166 (rel. Sep. 27, 2004) with proposed new language in boldface and deleted language struck.

§ 24.232 Power and antenna height limits.

(a) Base stations are limited to **the greater of** 1640 watts **average** ~~peak~~ equivalent isotropically radiated power (EIRP) **per carrier or 3280 watts/MHz average EIRP** with an antenna height up to 300 meters HAAT, except as described in paragraph (b) below. See Sec. 24.53 for HAAT calculation method. Base station antenna heights may exceed 300 meters with a corresponding reduction in power; see Table 1 of this section. ~~In no case may the peak output power of a base station transmitter exceed 100 watts.~~ The service area boundary limit and microwave protection criteria specified in Sec. 24.236 and Sec. 24.237 apply.

Table 2--Reduced Power for Base Station Antenna Heights Over 300 Meters

HAAT in meters	Maximum EIRP watts	**Maximum EIRP watts/MHz**
≤300	1640	**3280**
≤500	1070	**1070**
≤1000	490	**490**
≤1500	270	**270**
≤2000	160	**160**

(b) Base stations that are located in counties with population densities of 100 persons or fewer per square mile, based upon the most recently available population statistics from the Bureau of the Census, are limited to **the greater of** 3280 watts **average** ~~peak~~ equivalent isotropically radiated power (EIRP) **per carrier or 6560 watts/MHz average EIRP** with an antenna height up to 300 meters HAAT; See Sec. 24.53 for HAAT calculation method. Base station antenna heights may exceed 300 meters with a corresponding reduction in power; see Table 2 of this section. ~~In no case may the peak output power of a base station transmitter exceed 200 watts.~~ The service area boundary limit and microwave protection criteria specified in Sec. 24.236 and Sec. 24.237 apply. Operation under this paragraph must be coordinated in advance with all PCS licensees within 120 kilometers (75 miles) of the base station and is limited to base stations located more than 120 kilometers (75 miles) from the Canadian border and more than 75 kilometers (45 miles) from the Mexican border.

Table 2--Reduced Power for Base Station Antenna Heights Over 300 Meters

HAAT in meters	Maximum EIRP watts	**Maximum EIRP watts/MHz**
≤300	3280	**6560**
≤500	2140	**2140**
≤1000	980	**980**
≤1500	540	**540**
≤2000	320	**320**

(c) Mobile/portable stations are limited to 2 watts EIRP peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

(d) Peak **or average** transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, etc., so as to obtain a true peak **or average** measurement for the emission in question over the full bandwidth of the channel. **Systems employing discontinuous transmission technologies on one or more carriers shall be measured with all carriers in active transmission.**